

Message

From: Smallbeck, Donald R. [donald.smallbeck@woodplc.com]
Sent: 5/13/2019 11:27:25 PM
To: D'Almeida, Carolyn [dAlmeida.Carolyn@epa.gov]; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' [catherine.jerrard@us.af.mil]; 'Wayne Miller' [Miller.Wayne@azdeq.gov]; Pearson, Stuart C. [stuart.pearson@woodplc.com]
CC: d p [DPope@css-dynamac.com]; Davis, Eva [Davis.Eva@epa.gov]; GANGNUSS, GREGORY G GS-14 USAF HAF AFCEC/CIBP [gregory.gangnuss@us.af.mil]; Nicole Goers [Nicole.Goers@TechLawInc.com]; 'Brasaemle, Karla' [KBrasaemle@TechLawInc.com]; 'Rohrbaugh, Amanda' [ARohrbaugh@TechLawInc.com]; 'Bo Stewart' [bo@praxis-enviro.com]; William Hughes [William.Hughes@cn-bus.com]; 'steve@uxopro.com' [steve@uxopro.com]; 'Jennings, Eleanor' [Eleanor.Jennings@parsons.com]; 'Panzino, Paula@azdeq.gov' [Panzino.Paula@azdeq.gov]
Subject: RE: ST012 Site Activities

Carolyn

The field screening kits will continue to be utilized to provide screening level data on microbial populations as injections proceed to provide the necessary subsurface conditions for enhance biological degradation of petroleum hydrocarbons in soil and groundwater. This screening is in addition to the microbiological testing described in the Revised Final Pilot Study Work Plan as described below.

The Final Pilot Study Implementation Work Plan for Operable Unit 2, Revised Groundwater Remedy, Site ST012, Former Williams Air Force Base, Mesa, Arizona (Work Plan) provides for microbiological parameters analysis following EBR activity start-up. Table 5-1 of the Work Plan identifies the following wells and parameters to monitor populations of sulfate reducing bacteria (SRB) and benzene degraders beginning 6-12 months after start of injections "based on field conditions (including sulfate travel time and groundwater temperatures)":

Media	Locations	Monitoring/Analysis
Liquid/Bio Traps®	ST012-CZ02 ST012-CZ20 ST012-UWBZ24 ST012-UWBZ31 ST012-LSZ10 ST012-LSZ42	SIP (13 c in PLFA ST012-CZ20 and DIC) SRB (qPCR) EBAC (qPCR)

Appendix J Operational Decision Matrix of the Work Plan identifies similar monitoring parameters with a timeframe of 3-12 months after injection start-up. Baseline data for SRB and EBAC (Total Eubacteria) were collected from the listed wells in May 2018, but pre-EBR baseline SIP data was not collected (as discussed in previous BCT calls/meetings).

The sampling locations have not changed from those outlined in the Pilot Study Workplan but will continue to be evaluated as additional sampling data is collected and it is possible that changes may be proposed. Any proposed changes will be presented and discussed during BCT calls/meetings. The initial round of injections is not yet complete and no changes are proposed at this time. The timing of tests will depend on laboratory and field data that indicate the desired conditions have been established in the areas of treatment.

From: D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>
Sent: Thursday, May 09, 2019 11:44 AM
To: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>
Cc: d p <DPope@css-dynamac.com>; Davis, Eva <Davis.Eva@epa.gov>; GANGNUSS, GREGORY G GS-14 USAF HAF

AFCEC/CIBP <gregory.gangnuss@us.af.mil>; Nicole Goers <Nicole.Goers@TechLawInc.com>; 'Brasaemle, Karla' <KBrasaemle@TechLawInc.com>; 'Rohrbaugh, Amanda' <ARohrbaugh@TechLawInc.com>; 'Bo Stewart' <bo@praxis-enviro.com>; William Hughes <William.Hughes@cn-bus.com>; 'steve@uxopro.com' <steve@uxopro.com>; 'Jennings, Eleanor' <Eleanor.Jennings@parsons.com>; 'Panzino.Paula@azdeq.gov' <Panzino.Paula@azdeq.gov>
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Thank you Don.

Are you planning to collect baseline and periodic monitoring data using the screening kits, or will that be done with the MI QuantArray lab test you did before? What is the planned schedule/frequency of microbial sampling?

Carolyn d'Almeida
Remedial Project Manager
Federal Facilities Branch (SFD 8-1)
US EPA Region 9 Laboratory
1337 South 46th Street, Building 201
Richmond, CA 94804
(415) 972-3150

"We can evade reality, but we cannot evade the consequences of evading reality." - Ayn Rand

From: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>
Sent: Thursday, May 9, 2019 11:34 AM
To: D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>
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Please find attached the field test screening information.

The results to date are

UWBZ27 1.15x10⁵ cfu/ml

LSZ39 325 to 1400 cfu/ml

cfu=colony forming units

From: D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>
Sent: Thursday, May 09, 2019 10:47 AM
To: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>
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enviro.com>; William Hughes <William.Hughes@cn-bus.com>; 'steve@uxopro.com' <steve@uxopro.com>; 'Jennings, Eleanor' <Eleanor.Jennings@parsons.com>; 'Panzino.Paula@azdeq.gov' <Panzino.Paula@azdeq.gov>

Subject: RE: ST012 Site Activities

Thanks Don

Can you tell us what the name/manufacturer of field test kit you are using for sulfate reducers, and compilation of data you have so far for each of the wells?

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Federal Facilities Branch (SFD 8-1)
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From: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>

Sent: Wednesday, May 8, 2019 2:07 PM

To: D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>

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Subject: RE: ST012 Site Activities

Carolyn

It is a field screening test kit performed by Wood personnel which has been described in previous BCT presentations. There is no specific report other than the test kit results. I will provide the information associated with the kits in a separate email.

From: D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>

Sent: Wednesday, May 08, 2019 2:03 PM

To: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>; 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>

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Subject: RE: ST012 Site Activities

Can we get the field screening data reports indicating presence of sulfate reducers referenced below?
Thank you.

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From: Smallbeck, Donald R. <donald.smallbeck@woodplc.com>

Sent: Wednesday, May 8, 2019 1:47 PM

To: 'JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW' <catherine.jerrard@us.af.mil>; 'Wayne Miller' <Miller.Wayne@azdeq.gov>; D'Almeida, Carolyn <dAlmeida.Carolyn@epa.gov>; Pearson, Stuart C. <stuart.pearson@woodplc.com>

Cc: d p <DPope@css-dynamac.com>; Davis, Eva <Davis.Eva@epa.gov>; GANGNUSS, GREGORY G GS-14 USAF HAF AFCEC/CIBP <gregory.gangnuss@us.af.mil>; Nicole Goers <Nicole.Goers@TechLawInc.com>; 'Brasaemle, Karla' <KBrasaemle@TechLawInc.com>; 'Rohrbaugh, Amanda' <ARohrbaugh@TechLawInc.com>; 'Bo Stewart' <bo@praxis-enviro.com>; William Hughes <William.Hughes@cn-bus.com>; 'steve@uxopro.com' <steve@uxopro.com>; 'Jennings, Eleanor' <Eleanor.Jennings@parsons.com>; 'Panzino, Paula@azdeq.gov' <Panzino.Paula@azdeq.gov>

Subject: ST012 Site Activities

Activities through last week (5/03)

- SVE Operation
- LNAPL checks
- CZ21 repaired with new motor
- Continued extraction and treatment ~50 gpm, ~17.5 million total gallons treated since startup of EBR extraction.
- Operating Extraction Wells: CZ07, CZ21, UWBZ21, UWBZ26, UWBZ27, UWBZ30, LSZ09, LSZ11, LSZ12, LSZ23, LSZ37, LSZ38, LSZ39
- Extraction Wells Down: CZ18, UWBZ22
- CZ07 pumping at approximately 14 gpm.
- Started quarterly GW sampling (except for extraction wells still to be repaired)
- Injections:
 - UWBZ35: 3 tons 4/8, ~1 ton 4/9, 0.7 tons 4/10, 2.7 tons 4/12
 - LSZ08: 2 tons 4/9, 1.3 tons 4/10, 2.3 tons 4/12, 3 tons 4/17, 5 tons 4/18, 2.6 tons 4/25
 - LSZ47: 0.4 tons 4/25, 3 tons 4/26, 4.3 tons 4/29,
 - LSZ48: 5 tons 4/30, 2.5 tons 5/1
 - LSZ49: 3.5 tons 5/1, 2 tons 5/3
- Sulfate screening at LZS39 indicates that the sulfate concentration has achieved breakthrough, is in a range for EBR to commence, (approximately 1,000 mg/L and extraction was stopped on May 2 for aquifer re-equilibration. Field screening (semi-quantitative) of sulfate reducers after pumping was stopped (approximately 7 days) indicated a low level population is present. Approximately 10-14 days after extraction ceases, a Time 0 groundwater sample will be collected to establish a VOCs and inorganic parameter profile.
- Sulfate screening at UWBZ27 indicates that sulfate concentration has achieved breakthrough, is in range for EBR to commence, (approximately 1,000 mg/L and extraction was stopped on May 2 for aquifer re-equilibration. Field screening (semi-quantitative) of sulfate reducers after pumping had stopped (approximately 7 days) indicated a robust population of approximately 1×10^5 is present. Approximately 10-14 days after extraction ceases, a Time 0 groundwater sample will be collected to establish a VOCs and inorganic parameter profile.

This week (5/6-5/10)

- SVE Operation
- Continue extraction
- LNAPL checks
- CZ07 repair (went down 5/7, repair scheduled 5/9)
- Continue quarterly GW sampling
- Continue injecting sulfate

Next Week (5/13-5/17)

- SVE Operation
- LNAPL checks
- Continue extraction
- Repair CZ18 and UWBZ22
- Continue Injecting sulfate
- Time 0 sampling at LSZ39 and UWBZ27

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